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FOUNDED 1866

November 30, 2012

Mr. Richard Webster  
Public Justice  
1825 K Street, N.W., Suite 200  
Washington, D. C. 20006

Re: CDA Notice Letter of September 26, 2012

Dear Mr. Webster:

AES Puerto Rico L.P. ("AES Puerto Rico") received your September 26, 2012 letter ("Letter") stating your intention to file suit under RCRA § 7002 on behalf of a Comité Dialogo Ambiental, Inc. ("CDA") contending that the past use of AGREMAX was the "disposal" of a waste that "may present an imminent and substantial endangerment to human health and the environment," and constituted improper "open dumping" under RCRA. On behalf of AES Puerto Rico, we reject your contentions. AES Puerto Rico takes seriously its obligations to operate its Puerto Rico facility safely and to use AGREMAX lawfully and responsibly in Puerto Rico. For reasons outlined here, your assertions are groundless.

Foremost, AES Puerto Rico has not disposed of a "waste" as you claim. AES Puerto Rico has manufactured an aggregate from the coal ash produced at its electricity generating station. It then contracted with customers who beneficially use the aggregate as a component of structural fill or as a subbase material for private roads on their land. Upon request, AES Puerto Rico also has provided aggregate to nearby municipalities who beneficially used the aggregate to make needed improvements to local roads. AES Puerto Rico has received authorization from multiple regulators in Puerto Rico for the beneficial use of AGREMAX, and construction projects at which AGREMAX is used receive regulatory reviews and approvals. Therefore, AGREMAX has been beneficially used and not disposed of as a waste, and thus your RCRA § 7002 claims must fail.

Further, even if we were to assume that a particular application of AGREMAX involved the disposal of a solid waste, to state a claim under RCRA § 7002(a)(1)(B), CDA must demonstrate a clear nexus between the alleged disposal and a "serious near-term threat to human health or the environment." Yet, your letter does not proffer any information that would suggest that using the material in roads or structural fill may result in actual exposure to persons, wildlife or plants to hazards at the locations you listed that would present such a threat. On the contrary,

Mr. Richard Webster

November 30, 2012

Page 2

as has been repeatedly documented, AGREMAX is not hazardous and does not present an endangerment to health or the environment.

Accordingly, we urge you not to proceed with this proposed litigation.

## **BACKGROUND**

**The AES Puerto Rico Facility.** AES Puerto Rico is the leading provider of low-cost electricity for Puerto Rico. AESPR has invested more than \$800 million to develop and construct a 454.3 megawatt net coal-fired power plant and related facilities located in Guayama (the "AES Puerto Rico Facility" or "Facility"). The power plant project was one of the largest private investments in Puerto Rico's history, and today is arguably the most successful public-private partnership in the Commonwealth, saving consumers and businesses hundreds of millions of dollars in energy costs. Since operations began in 2002, the AES Puerto Rico Facility has provided steady employment for over 100 people and produced more than 15% of Puerto Rico's total electric power needs under a long-term Power Purchase Agreement ("PPA") with the Puerto Rico Electric Power Authority ("PREPA").

The AES Puerto Rico Facility is a state-of-the-art electricity generating facility using a circulating fluidized bed ("CFB") technology, not the more traditional pulverized coal boiler. A CFB facility operates at a lower temperature, producing lower NOx emissions, and the action of the fluidized bed when mixed with limestone or other sulfur absorbing materials, reduces SO<sub>2</sub> emissions. There are also significant add-on control systems, including a circulating dry scrubber, an electrostatic precipitator and a selective non-catalytic reduction system, all in conjunction with the use of low sulfur coal. The controls are authorized under a Clean Air Act Prevention of Significant Deterioration ("PSD") permit issued by Region 2 of the United States Environmental Protection Agency ("EPA"), which determined the AES Puerto Rico Facility met all Best Available Control Technology or "BACT" requirements.<sup>1</sup> The Facility also has a Clean Air Act Title V Operating Permit issued by the Puerto Rico Environmental Quality Board ("EQB") and reviewed and approved by EPA.<sup>2</sup> The Facility is also a "zero water discharge" facility, meaning that all wastewater is recycled or reused without discharge into the environment.

**AES Puerto Rico Coal Combustion Products.** Burning coal to produce electricity also generates an inert ash material composed of non-combustible carbon, various minerals and

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<sup>1</sup> The PSD permit is available at <http://www.epa.gov/region2/air/permit/AES10292001.pdf>. The limits are among the lowest for any coal plant in the United States, with an SO<sub>2</sub> emission rate of only 0.022 lbs/MMBtu, and a PM/PM-10 emission rate of 0.015 lbs/MMBtu. *Id.* at VIII.1.a.1, 4.a.1.

<sup>2</sup> <http://www2.pr.gov/agencias/jca/Documents/Permisos%20y%20Formularios/Calidad%20de%20Aire/Permisos%20de%20Operaci%C3%B3n%20T%C3%ADtulo%20V%20Finales/AES%20FINAL%20Permit.pdf> ("Title V permit").

Mr. Richard Webster

November 30, 2012

Page 3

limestone. From the outset, U.S. EPA and Puerto Rico regulators knew that AES Puerto Rico would be generating electricity using coal and that the Facility would therefore be producing coal ash. In line with federal and Commonwealth policies encouraging recycling and reuse, PREPA and AES Puerto Rico addressed this in the PPA in 1994, agreeing that coal combustion products (“CCPs”) would be used beneficially in Puerto Rico, as opposed to discarding the material in a local landfill.<sup>3</sup> Thereafter, AES Puerto Rico sought – and received – all necessary approvals to put coal ash and related products to beneficial use in Puerto Rico.

Specifically, on May 1, 1996, the Puerto Rico Planning Board approved the siting of the AES Puerto Rico Facility subject to various terms and conditions, including the requirement that coal ash produced by the AESPR Facility would “be converted to secondary and useful products, [including] ... use as substrate on roads, mineral filling on asphalt, structural filling, [or] daily cover for sanitary fillings ....” Planning Board Resolution Third Extension to Location Approval (Consulta de Ubicacion) Number 94-71-1099-JPU (May 1, 1996) (unofficial translation). Likewise, in 1996, the Puerto Rico EQB examined the proposed operations of the AES Puerto Rico Facility and determined, in Resolution R-96-39-1, that the facility would be producing a useful product through the manufacture of aggregate and would not be generating a material subject to regulation as either a solid or hazardous waste.<sup>4</sup> Indeed, AES Puerto Rico’s Title V Air Permit (issued by EQB and approved by EPA) specifically contemplated an “aggregate manufacturing process” and provided that under one operating scenario “trucks may be used to haul ... manufactured aggregate offsite for on island beneficial uses.” Title V Permit at 4, 65.

Based on these approvals, AES Puerto Rico has used the ash produced by its Facility to manufacture an aggregate lawfully sold and beneficially used under the brand name AGREMAX<sup>TM</sup>. To produce AGREMAX, the Facility mixes and hydrates the coal ash in an on-site mill, and the resulting mixture is then compacted and cured. This process of hydration, compaction and curing physically converts the coal ash into a hardened, manufactured aggregate, which is then further processed to reduce it to the appropriate size (similar to gravel) for its intended use. Studies conducted by experts at the Texas A&M Transportation Institute and others that performed tests on the aggregate confirmed that AGREMAX has the necessary physical, mechanical, and chemical properties so that it can be used effectively in a range of applications, including road base and structural applications. *E.g.*, S. Kochyil and D. N. Little,

<sup>3</sup> The Letter’s assertion that “Puerto Rican officials required” AES Puerto Rico to remove coal ash from Puerto Rico “due to the serious health hazards associated with its presence,” Letter at 3, is incorrect. Nothing in the PPA suggests this was the case. Indeed, it is wholly illogical to draw that conclusion given the clear understanding and approval in the PPA to make beneficial use of the material in Puerto Rico.

<sup>4</sup> *In re AES Puerto Rico, L.P. Barrio Jobos Guayama, Puerto Rico*, R-96-39-1 (Oct. 31, 1996), unofficial translation available at <http://www.agremax.com/Downloads/R-00-96-2%20ENGLISH.pdf>. The Letter is incorrect in asserting that Resolution R-96-39-31 was premised upon the aggregate being “a cement-like product.” Letter at 4. Rather, Resolution R-96-39-31 accurately describes that “cementation”—a physical process—occurs during the production of the aggregate as the coal ash hardens and binds together.

Mr. Richard Webster

November 30, 2012

Page 4

Physical, Mechanical and Chemical Evaluation of Manufactured Aggregate (2004) (the AES Puerto Rico “manufactured aggregate has excellent properties for use as a fill or structural fill” and “may serve successfully as a subbase or base layer in pavements”).<sup>5</sup>

Supported by these engineering analyses and other studies documenting the effectiveness and safety of AGREMAX, AES Puerto Rico has marketed its manufactured aggregate for use as a subbase material for highways, roads, parking lots, and as structural fill. Subbase material essentially serves as a foundation for these applications, serving a critical load-bearing function. When used in roads and similar applications, AGREMAX has been placed as a subbase, compacted, and then covered by a layer of native aggregate material (known as “mogolla”) and/or by asphalt which serves as the road surface. By using AGREMAX in this fashion, it conserves natural resources, as the manufactured aggregate replaces virgin sand and gravel that would have had to have been excavated from local quarries in Puerto Rico. Moreover, in an effort to ensure its customers use the aggregate properly, AES Puerto Rico customers signed a terms of use contract, agreeing to comply at all times with applicable federal, Commonwealth, and local laws, regulations, ordinances, orders, and requirements.

Engineering analyses have subsequently confirmed the benefits of using AES Puerto Rico’s manufactured aggregate in construction projects, including road building. For example, in 2011, engineering experts reviewed actual applications of AGREMAX as road subbase material in Puerto Rico, collected field data, and performed standard engineering tests and calculations to examine the effectiveness of the material, and found the projects to be performing extremely well after several years of service. *See* R. Carrasquillo to R. Rivera, Re: Testing and Condition Assessment Results Projects with Agremax Subbase AES Puerto Rico Guayama, Puerto Rico (January 7, 2011) (finding “no evidence of distress of Agremax subbase”). Indeed, after performing engineering tests, the experts concluded that the in-place strength and performance results “are much greater than expected for a typical subbase and exceed” the predictions made by Kochyil and Little, discussed *supra*, based on their laboratory testing. Carrasquillo at 16. Based in part on Dr. Carrasquillo’s work, the United States’ Federal Highway Administration and Puerto Rico’s Department of Transportation have accepted AGREMAX into a pilot program for federal and state road projects, and the agencies are currently testing the strength and effectiveness of the material in a bridge project in Guayama.<sup>6</sup>

Moreover, Puerto Rico regulators have repeatedly affirmed that AGREMAX is not subject to regulation as a solid or hazardous waste. In 2000, the Puerto Rico EQB issued Resolution R-00-14-2 and reaffirmed its earlier 1996 determination that the AESPR facility would be producing a useful material through the manufacture of AGREMAX and would not be

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<sup>5</sup> Available at <http://www.agremax.com/Downloads/Final%20Report%20-%20TTI.pdf>

<sup>6</sup> This is consistent with the federal government’s long support for the beneficial use of coal ash products in road construction across the United States. <http://www.fhwa.dot.gov/pavement/recycling/fafacts.pdf>

Mr. Richard Webster

November 30, 2012

Page 5

generating solid or hazardous waste. *See* Government of Puerto Rico, Office of the Governor, Environmental Quality Board, R-00-14-2 (May 3, 2000) (confirming that “AES-PR’s manufactured aggregate” would not be subject to regulation as a solid waste as it is produced as part of “an internal process carried out in the same generation place that produces a material that will not enter into the flow of solid waste that is discarded or abandoned.”) (unofficial translation) (“EQB 2000 Resolution”).<sup>7</sup> In January 2005, an independent laboratory hired by the Puerto Rico EQB took samples of and analyzed the AES Facility’s AGREMAX and concluded that the manufactured aggregate is neither toxic nor hazardous.<sup>8</sup> After examining those laboratory results and other information, in 2005 the Puerto Rico EQB again authorized the use of AES Puerto Rico’s manufactured aggregate in road applications.<sup>9</sup> The Southern Commission for Economic Development of the Puerto Rico House of Representatives also conducted an in depth examination of AGREMAX in 2006-2007 – including the evaluation of available data by an independent laboratory – and concluded that AGREMAX is not toxic or hazardous to humans or the environment.<sup>10</sup>

Thus, the regulators, the data, and expert analyses all confirm the safety and effectiveness of AGREMAX for beneficial use in Puerto Rico. We do note in passing that your Letter recites almost as though they were facts a series of accusations regarding the transfer of material from AES Puerto Rico to Silver Spot Enterprises and the placement of that material in the Dominican Republic. Letter at 2-4. Suffice it to say, we reject those baseless, unproven allegations which AES Puerto Rico is disputing in ongoing litigation. Regardless, the circumstances surrounding that transfer have nothing whatsoever to do with whether AES Puerto Rico has lawfully and safely produced a manufactured aggregate that has been beneficially used in roads and structural applications in Puerto Rico. Accordingly, we will not provide a point-by-point rebuttal of those wholly irrelevant allegations.

We would further note, however, that the citation in CDA’s Letter to a district court decision that dismissed, in part, the Dominican Republic’s allegations is misleading. As you surely know, in that ruling the court was deciding a motion to dismiss. It therefore explicitly stated that it had to “accept as true the allegations in the complaint” and was “not resolv[ing] contests surrounding the facts....” *Gov’t of Dominican Republic v. AES Corp., et al.*, 466 F. Supp. 2d 680, 686 (E.D. Va. 2006). Thus, *none* of the accusations you reference were ever adjudicated by the court. To the contrary, when the Dominican government settled, it did not just “withdraw its allegations,” as your letter implies; rather, the government affirmatively stated

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<sup>7</sup> Unofficial English translation available at <http://www.agremax.com/Downloads/R-00-14-2%20ENGLISH.pdf>

<sup>8</sup> Available at <http://www.agremax.com/Downloads/EQB%20Samples%20Results.pdf>

<sup>9</sup> *See* Letter from J. Rodriguez Colon, EQB to N. Watlington, AES Puerto Rico (Feb. 22, 2005).

<sup>10</sup> Copy at <http://www.agremax.com/Downloads/Tab%208%20-%20House%20of%20Representatives%20Report.pdf>

Mr. Richard Webster  
November 30, 2012  
Page 6

that the aggregate “Material that originated at the AES Puerto Rico, L.P. plant and was or is now at the Samana and Manzanillo sites is not toxic or hazardous to humans, the environment, or otherwise ....” Settlement Agreement and Release at ¶4.a (Feb. 27, 2007).

## **CDA DOES NOT HAVE A CLAIM UNDER RCRA § 7002**

RCRA § 7002(a)(1)(B) authorizes a person to bring a civil action “against any person, ... including any past or present generator, past or present transporter, or past or present owner or operator of a treatment, storage, or disposal facility, who has contributed or who is contributing to the past or present handling, storage, treatment, transportation, or disposal of any solid or hazardous waste which may present an imminent and substantial endangerment to health or the environment...” Each of these elements must be present for CDA to be able to pursue a claim under RCRA § 7002(a)(1)(B) against AES Puerto Rico.

### **I. The Beneficial Use Of AGREMAX Is Not Disposal Of Solid Waste**

#### **A. To be a solid waste under RCRA § 7002, a material must be thrown away or discarded**

A central premise underlying CDA’s potential claim is that the use of AGREMAX is disposal of a “solid waste” subject to RCRA.<sup>11</sup> If AGREMAX is not a “solid waste,” then CDA has no RCRA claim. However, by definition, only a material that has been thrown away or discarded is a solid waste subject to RCRA § 7002. By contrast, AGREMAX is a valued manufactured aggregate product used to build or improve roads and in other lawful applications. Hence, it is not and cannot be a “solid waste” subject to RCRA.

The language of RCRA is plain. A “solid waste” is defined only as follows:

any garbage, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations.

42 U.S.C. § 6903(27) (emphasis added). Such statutory terms should be “interpreted in accordance with their ordinary meaning.” *BP Am. Production Co. v. Burton*, 549 U.S. 84, 91 (2006). This plain meaning “is determined by reference to the language itself, the specific context in which that language is used, and the broader context of the statute as a whole.”

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<sup>11</sup> CDA does not assert that AGREMAX is “hazardous waste.” Nor could it. To be a “hazardous waste” under RCRA § 7002 a material must fail an approved EPA test, such as the Toxicity Characteristic Leaching Protocol or “TCLP,” which AGREMAX has repeatedly passed. *E.g.*, <http://www.agremax.com/Downloads/Tab%209%20-%20TCLP%20Agremax%209-15-09.pdf>. CDA offers no data to the contrary.

Mr. Richard Webster

November 30, 2012

Page 7

*Robinson v. Shell Oil Co.*, 519 U.S. 337, 341 (1997); *see Dole v. United Steelworkers of Am.*, 494 U.S. 26, 35 (1990) (“Our ‘starting point is the language of the statute,’ ... but ‘in expounding a statute, we are not guided by a single sentence or member of a sentence, but look to the provisions of the whole law, and to its object and policy.’”). If Congress’ intent is clear, then “that intention must be given effect.” *Chevron U.S.A., Inc. v. Natural Res. Def. Council, Inc.*, 467 U.S. 837, 842-43 (1984).

Applying these principles, federal courts agree that material is “discarded” under RCRA when it is “disposed of,” “thrown away,” or “abandoned.” *Am. Petroleum Inst. v. EPA*, 216 F.3d 50, 55-56 (D.C. Cir. 2000); *Am. Mining Congress v. EPA*, 824 F.2d 1177, 1179 (D.C. Cir. 1987) (“The ordinary, plain-English meaning of the word ‘discarded’ is ‘disposed of,’ ‘thrown away’ or ‘abandoned.’”); *see Safe Air For Everyone v. Meyer*, 373 F.3d 1035 (9th Cir. 2004) (the verb “discard” is defined by dictionary and usage as to “cast aside; reject; abandon; give up.”). An aggregate that is manufactured, stored, marketed, sold and applied as a road subbase and/or as a structural fill plainly is not “cast aside” or “thrown away.” Indeed, in adopting RCRA, Congress expressly noted that RCRA does not regulate industrial waste that is not “discarded” and thus does not meet the definition of “solid waste.” H.R. Rep. No. 94-1491, 94th Cong., 2d Sess. at 2, reprinted in 1976 U.S.C.C.A.N. 6238, 6240 (noting that “waste” is a misleading word, as “much industrial and agricultural waste is reclaimed or put to new use and *is therefore not a part of the discarded materials disposal problem* the committee addresses.”)

In assessing whether material has been “discarded,” courts have looked to whether the material has been (or is proposed to be) put to beneficial use. Thus, for example, in *Oklahoma v. Tyson Foods*, 2010 U.S. Dist. Lexis 14941 (N.D. Okl. Feb. 17, 2010), the court held that poultry litter beneficially used as a fertilizer by farmers was not a “solid waste” subject to a RCRA § 7002 action. The court rejected the State of Oklahoma’s arguments that poultry litter should be deemed a “solid waste” because when it was applied and used as a fertilizer it contained more phosphorous than might be necessary for agricultural purposes.

Other courts likewise focus on the beneficial use made of the material in assessing whether it is a “solid waste” under RCRA. Thus, in *No Spray Coalition v. City of New York*, the Second Circuit affirmed that despite being sprayed across the landscape (thereby causing incidental air emissions), a pesticide used with the intention to kill pests is not “discarded” as it is put to its intended and useful purpose. Similarly, in *Simsbury-Avon Preservation Society, LLC v. Metacon Gun Club*, the court found that a bullet fired from a gun is not “discarded” (even though it falls into the environment) because the shooter “is putting the lead bullet to its intended use.” 2005 U.S. Dist. LEXIS 11699 at \*18 (D. Conn. June 14, 2005); *see also Otay Land Co. v. U.E. Ltd.*, 440 F. Supp. 2d 1152, 1179-80 (S.D. Cal. 2006) (munitions used for intended purpose are not discarded); *Long Island Soundkeeper Fund, Inc. v. N.Y. Athletic Club*, 1996 WL 131863, at \*8 (S.D.N.Y. Mar. 22, 1996) (same).

Mr. Richard Webster

November 30, 2012

Page 8

This same analysis applies even where some portion of the product is not beneficially consumed but escapes into the environment. In *Meyer, supra*, the Ninth Circuit held that grass residues burned in order to fertilize fields were “the type of agricultural remnant, used by farmers to add nutrients to soil, that Congress did not consider to be ‘discarded.’” 373 F.3d at 1046. The plaintiff argued in that case that the fact that smoke particles blew off the field demonstrated that the burning was really disposal. The Ninth Circuit disagreed, holding that even an incidental agricultural benefit removes a practice from RCRA’s scope. *Id.* at 1044. The burning extended the life of bluegrass fields by providing beneficial nutrients, reducing weeds, insects and disease, and improving sunlight absorption. *Id.* at 1044-45. Although ash and smoke were carried off, the court found the grass residue was not “discarded.” *Id.* at 1046 n.13.

The common themes of these cases are (1) that the intended and beneficial use of a product is not the “discard” of a “waste” and (2) that the intended use governs, not whether the useful product contains chemical substances or may allegedly cause effects in the environment. “[W]hether grass residue has been ‘discarded’ is [determined] independently of how the materials are handled” including whether that handling allegedly causes pollution. *Id.*; *see also No Spray Coalition, supra* (pesticide not discarded despite being released into the air); *Tyson Foods, supra* (fact that crop did not need phosphorous contained in litter did not make the material a solid waste).

The plain reading of RCRA that the beneficial use of a valuable product such as AGREMAX is not a “discard” nor the disposal of a “solid waste” is fully supported by EPA national guidance regarding the use of coal combustion products, such as coal ash. As a matter of national policy, EPA has long supported the beneficial use of coal combustion products. In 2000, before the AES Puerto Rico Facility was operating, EPA made a formal Regulatory Determination that beneficial uses would be exempt from regulation under RCRA’s “Bevill Amendment” (42 U.S.C. §6921(b)(3)(A)(ii), codified at 40 C.F.R. §261.4(b)). Indeed, EPA specifically found that beneficial uses included using coal combustion products in road bed and structural fill:

Beneficial purposes include waste stabilization, beneficial construction applications (e.g., cement, concrete, brick and concrete products, *road bed, structural fill*, blasting grit, wall board, insulation, roofing materials), agricultural applications (e.g., as a substitute for lime) and other applications (absorbents, filter media, paints, plastics and metals manufacture, snow and ice control, waste stabilization).

65 Fed. Reg. 32214, 32229. (May 22, 2000) (emphasis added). EPA observed that, in addition to having no information that such uses posed significant risks or had caused damage, “we do not want to place any unnecessary barriers on the beneficial use of coal combustion wastes so that they can be used in applications that conserve natural resources and reduce disposal costs.” *Id.*



Mr. Richard Webster  
November 30, 2012  
Page 9

EPA has never changed this policy. To the contrary, in its 2010 proposal to regulate disposal of coal ash, EPA proposed to reaffirm this determination. 75 Fed. Reg. 35128 (June 21, 2010) (“EPA 2010 Proposal”). EPA specifically concluded that “[t]o date, EPA has still seen no evidence of damages from the beneficial uses of CCRs that EPA identified in its original Regulatory Determination.” 75 Fed. Reg. at 35154. As a result, EPA proposed to “leave the Bevill determination in effect for the beneficial use of CCRs,” and, as such, the “legal status of CCRs that are beneficially used would remain entirely unchanged (i.e., they would not be regulated under subtitle C of RCRA as a hazardous waste, nor subject to any federal non-hazardous waste requirements).” *Id.* at 35186 and at 35162 (“EPA does not wish to inhibit or eliminate the significant and measurable environmental and economic benefits derived from the use of this valuable material without a demonstration of an environmental or health threat.”) Therefore, the beneficial use of AGREMAX as a valuable construction material is consistent with EPA’s well-established policy encouraging such uses.

**B. CDA’s assertions regarding AES Puerto Rico’s use of aggregate do not establish disposal of a solid waste under RCRA**

Applying these principles here, it is clear that AES Puerto Rico did not dispose of a “solid waste” under RCRA. As outlined, AES Puerto Rico manufactures, markets, and sells AGREMAX to customers who use the aggregate product to build roads, bridges, and parking lots, and to stabilize structural fill for construction projects. As the Puerto Rico EQB specifically has found, “AES-PR’s manufactured aggregate” is not a “solid waste that is discarded or abandoned.” EQB 2000 Resolution, *supra*. Indeed, AES Puerto Rico was not “throwing away” anything, but manufacturing an aggregate to be used for precisely the “beneficial construction applications” that EPA has specifically identified as permitted by law for more than a dozen years. *See* 65 Fed. Reg. 32214, 32229 (“Beneficial purposes include ... beneficial construction applications (e.g., ... road bed, structural fill, ...)” (emphasis added)).

AES Puerto Rico’s use of AGREMAX likewise squares with EPA’s proposed definition of “beneficial use” in its 2010 Proposal. There, EPA proposed to define the beneficial use of CCPs to mean the “use of CCPs that provides a functional benefit; replaces the use of an alternative material, conserving natural resources that would otherwise need to be obtained through practices such as extraction; and meets relevant product specifications and regulatory standards (where these are available).” 75 Fed. Reg. at 35254; *see* 75 Fed. Reg. at 35162 – 63 (explaining and asking for comment on the criteria EPA would take into account).<sup>12</sup> As described above, the use of AGREMAX meets each of these criteria.

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<sup>12</sup>EPA does note “there are situations where large quantities of CCRs have been used indiscriminately as unencapsulated general fill” which it does not consider beneficial use. 75 Fed. Reg. at 3515. EPA therefore provided that “CCPs that are used in excess quantities, placed as fill in sand and gravel pits, or used in large scale fill projects, such as for restructuring the landscape, are not considered beneficial uses.” 75 Fed. Reg. at 35254.

Mr. Richard Webster

November 30, 2012

Page 10

Regardless, CDA offers no site-specific data to the contrary from *any* of the 36 sites it references. Rather, in the Letter, CDA makes several conclusory assertions in support of its contention that AGREMAX has been disposed of and not beneficially reused. Initially, CDA appears to be asserting that merely using AGREMAX in various projects such as road projects and structural fill is itself “disposal” of a solid waste. Letter at 4. As explained above, that is incorrect as a matter of law, because, among other reasons, EPA has long stated that using AGREMAX in road bed and structural fill applications is a beneficial use exempt from RCRA.

Second, CDA claims AGREMAX “has been left in piles at various locations.” Letter at 4. CDA provides no documented support for this assertion or provide any specificity regarding the locations of these alleged piles. Nor are the photographs attached to the Letter instructive. None of the “Photographs of Disposal Sites” depict “piles” of material, but rather each of the photos appear to show a beneficial use, such as a road bed or similar application. Moreover, it is impossible to discern from the photographs of the “Other” sites where they are located, when the photo was taken, and what even may be in the material shown (*i.e.*, whether it is AGREMAX or something else). In any case, even if there were allegedly a “pile,” you have not shown that these were something other than temporary storage areas before aggregate was laid down and covered as subbase or structural fill. It is black letter law that a plaintiff must provide adequate notice of its claims before bringing a citizen suit claim. *Hallstrom v. Tillamook County*, 493 US 20, 26 (“compliance with the 60-day notice provision is a mandatory, not optional, condition precedent for suit”); *see also Garcia v. Cecos Int’l, Inc.*, 761 F.2d 76, 78-82 (1st Cir. 1985). Vague assertions about unspecified piles would wholly fail to meet that requirement.<sup>13</sup>

Next, CDA quotes from an EPA November 2011 letter to the EQB regarding the regulatory framework in place in Wisconsin and Rhode Island regarding beneficial use of coal combustion products. Letter at 5. These observations are irrelevant, since the regulations of Wisconsin and Rhode Island do not apply in Puerto Rico. Further, as you know, Puerto Rico EQB has proposed beneficial use guidelines, and AES Puerto Rico supports reasonable and rational guidelines governing the use of coal combustion products, such as AGREMAX, including engineering controls as provided by the draft EQB guidelines. That said, the lack of formal regulatory standards in Puerto Rico regarding the beneficial use of CCPs is not evidence that AGREMAX has been “discarded” and that “disposal” occurred.

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Accordingly, EPA stated it would exclude filling up large scale “sand and gravel pits,” quarries and other “large scale fill operations,” claiming the agency had evidence of damage associated with these particular uses, and that it had not identified such uses in 2000 as “beneficial.” 75 Fed. Reg. at 35161, 35163. The large scale fill project that appeared to be of greatest concern to EPA involved the use of a material to landscape an 18-hole golf course. 75 Fed. Reg. at 35163. None of the instances where AGREMAX has been used involved similar circumstances.

<sup>13</sup> These conclusory assertions would also fail the pleading requirements imposed by the Supreme Court after *Ashcroft v. Iqbal*, 556 U.S. 662 (2009) and *Bell Atlantic Corp. v. Twombly*, 550 U.S. 544 (2007). *See e.g., Collazo-Rosado v. University of Puerto Rico*, 775 F. Supp. 2d 376 (2011) (describing requirements).

Mr. Richard Webster  
November 30, 2012  
Page 11

CDA further quotes from EPA's November 2011 letter suggesting that land placement of AGREMAX at several of the 10 sites EPA visited may constitute disposal because EPA believed the volumes placed exceeded those needed. Letter at 5. We respectfully disagree with EPA's statements, which were not based on any engineering analysis of which we are aware. To our knowledge, each of the sites listed in EPA's letter involved the use of AGREMAX in a road or similar project or the sale and transfer of aggregate to a private contractor to use the material for similar purposes. In none of these instances did AES Puerto Rico intend to throw away or discard the material. CDA should provide the actual factual bases for each of the specific sites that it claims constitute disposal before embarking on litigation.<sup>14</sup>

**C. The use of AGREMAX does not present an imminent and substantial endangerment to health or the environment under RCRA § 7002**

Even if in any particular instance placement of AGREMAX was disposal of a "solid waste," CDA must separately prove that particular act of "disposal" presents an imminent and substantial endangerment to health or the environment. To show that in a court within the First Circuit, like Puerto Rico, you would have to prove that there is "a reasonable prospect that a serious, near-term threat to human health or the environment exists." *Me. People's Alliance & Natural Res. Def. Council v. Mallinckrodt, Inc.*, 471 F.3d 277, 279 (1st Cir. 2006). Applying *Mallinckrodt*, the District of Puerto Rico held that the "mere presence" of contaminants in the environment is alone not enough to constitute an imminent and substantial endangerment. *Sanchez v. Esso Std. Oil De P.R.*, No. 08-2151, 2010 U.S. Dist. LEXIS 103949, at \*28-30 (D.P.R. Sept. 29, 2010), citing *Mallinckrodt, supra*, at 282. An imminent and substantial endangerment does not exist "if the risk of harm is remote in time, speculative in nature, and de minimis in degree." *Sanchez, supra*, citing *Smith v. Potter*, 187 F. Supp. 2d 93, 98 (S.D.N.Y. 2001), quoting *Wilson v. Amoco Corp.*, 989 F.Supp. 1159, 1172 (D. Wyo. 1998). While "imminence" does not require that the "harm necessarily will occur or that the actual damage will manifest itself immediately," it must, nevertheless, be of the "kind that poses a near-term threat." *Sanchez, supra*, citing *Mallinckrodt, supra* at 288.

**1. CDA has proffered no site-specific data documenting an actual risk**

Courts hold plaintiffs to their burden of proving that such "a serious, near-term threat to human health or the environment" actually exists at the particular alleged sites. For example, in *Kaladish v. Uniroyal Holding, Inc.*, the district court entered summary judgment against plaintiffs on their imminent and substantial endangerment claim when they failed to offer testing of soil or groundwater samples from the allegedly contaminated area. No. 3:00 CV 854, 2005 U.S. Dist. LEXIS 17272, at \*18-20 (D. Conn. Aug. 9, 2005); *see also, e.g., Price v. United States*

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<sup>14</sup> Because the placement of AGREMAX is not disposal of a solid waste, any claim of alleged "open dumping" under RCRA § 4005 likewise fails.

Mr. Richard Webster  
November 30, 2012  
Page 12

*Navy*, 39 F.3d 1011, 1021 (9th Cir. 1994) (affirming dismissal of imminent and substantial endangerment claim when plaintiff failed to offer site-specific testing data); *Fishel v. Westinghouse Elec. Corp.*, 640 F. Supp. 442, 446 (M.D. Pa. 1986) (declining to find imminent and substantial endangerment when plaintiffs' evidence was outdated).

CDA's letter does not remotely state a claim that the use of AGREMAX is causing such a threat. Fundamental to demonstrating a threat is proof that (1) an allegedly harmful constituent is actually present at the listed sites at a harmful level; (2) there is an actual pathway by which people (or plants and wildlife) are actually being exposed to the compound at levels that may present a serious threat to health and the environment; and (3) that this risk (i.e., the combination of hazard and exposure) is caused by the use of AGREMAX.

Yet, CDA has not proffered *any site-specific* evidence showing an actual risk at the listed locations. For example, CDA offers no site-specific data from any of the locations documenting any actual concentrations of hazardous constituents in the environment due to the presence of AGREMAX, or any human exposure to any such constituents at allegedly harmful concentrations. Rather, CDA refers to AES Puerto Rico's *laboratory* testing of AGREMAX and other unspecified laboratory data (not provided with the Letter). These data do not provide any information about the concentration of hazardous constituents in the environment at the sites where AGREMAX has been used, nor about the nature or extent of any exposure to such constituents. CDA does compare those data to a series of inappropriate criteria, including unsupported "background" concentrations, inapplicable residential screening levels, and other thresholds. However, this evaluation is irrelevant and speculative because it does not say anything about the identity and concentration of constituents at any particular site, the extent to which any of those concentrations are linked to the use of AGREMAX, nor what, if any, are the human and environmental exposures to such constituents.

Nor does CDA provide any real evidence of exposure to humans, wildlife, or plant life. As noted, CDA provides photographs of locations where it asserts AGREMAX has been disposed of and not beneficially used. However, setting aside the questions regarding these photos, the pictures could not and do not establish that these sites present "a serious, near-term threat to human health or the environment" because (1) they do not provide any information about concentrations of hazardous constituents at those sites and whether those concentrations are cause for concern; (2) do not provide any information on the nature and extent of exposure to such constituents and (3) do not establish a causal relationship between the use of AGREMAX and any such concentrations of hazardous constituents or exposure to them. Indeed, the list in your Letter includes roads that are covered with a layer of mogolla, asphalt or cement, such that there is no apparent exposure pathway to the underlying road bed containing AGREMAX. The list even includes the bridge project being overseen by federal and state transportation officials evaluating the strength of AGREMAX as structural fill material. Absent site-specific risk data,

Mr. Richard Webster  
November 30, 2012  
Page 13

CDA has no credible basis for asserting a threat of a serious harm warranting intervention by a federal court.

**2. The data cited in the CDA Letter do not support a contention that there may be an imminent and substantial endangerment to health or the environment actionable under RCRA § 7002**

In any case, even assuming the laboratory data on which you rely reflect actual concentrations of constituents in the environment at each of the 36 locations you list, those data do not demonstrate a serious risk either to health or the environment. We address the human health and ecological risk allegations in turn.

**a. Human health**

**(i) Comparisons of metals concentrations in AGREMAX to “background” do not demonstrate any endangerment to human health.**

The Letter first argues that five metals (beryllium, boron, mercury, molybdenum, and selenium) are present in AGREMAX above “local background level.” Letter at 7. The CDA’s premise seems to be that because these five substances were allegedly found at levels above “background” there is somehow an imminent and substantial endangerment to human health.<sup>15</sup>

CDA’s premise is without merit as a matter of law. As the *Sanchez* court explained, “the First Circuit has made abundantly clear, [that] the ‘mere presence’ of contamination alone cannot support a claim of imminent and substantial endangerment.” *Sanchez, supra* at \*28, citing *Mallinckrodt*, 471 F.3d at 282. Background levels of substances in the environment are descriptors of a particular condition, and are not requirements set by regulation or science. Even if background levels were of regulatory consequence, “courts have noted that [even] the exceedance of a regulatory standard cannot in and of itself prove imminent and substantial harm.” *Sanchez, supra* at \*28, citing *Orange Env’t, Inc. v. Cnty of Orange*, 860 F. Supp. 1003, 1028-29 (S.D.N.Y. 1994).

Moreover, the Letter cites no judicial precedent suggesting that being “above background” presents a basis for proceeding under RCRA § 7002. Had Congress intended to authorize action simply because there is a substance added to background concentration, it could have done so. Instead, the Congress required an imminent and substantial endangerment.

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<sup>15</sup> Without limitation, we note that the concentrations in AGREMAX fall within the range of background concentrations reported by ATSDR in the Vieques report referenced in your Letter for Puerto Rico (as to boron and molybdenum) and the United States (as to mercury and beryllium).  
[http://www.atsdr.cdc.gov/HAC/PHA/reports/isladevieques\\_02072003pr/tables.html#T2](http://www.atsdr.cdc.gov/HAC/PHA/reports/isladevieques_02072003pr/tables.html#T2) Table 2

Mr. Richard Webster

November 30, 2012

Page 14

Hence, the addition of a substance into the environment must be measured against that yardstick – not whether it is above “background.”<sup>16</sup>

Further, as a matter of sound science, merely asserting that these five metals are in the environment says nothing about whether there may be an endangerment. If a metal is usually present in soils at 5 mg/kg but found in AGREMAX at 10 mg/kg, that does not mean that human health is in any way endangered if AGREMAX is used to build a road. The question is whether adding 10 mg/kg of the substance to the environment by using it in a road bed could present a serious hazard to human health, what could be the routes of exposure to the substance in the material (e.g., eating/drinking, breathing in and/or touching) *and* whether humans are actually exposed to the metal at a concentration in a manner that presents an actionable risk. CDA’s “background” comparison establishes none of these essential components of risk.

**(ii) The purported comparisons of metals in AGREMAX to unspecified soil screening levels likewise do not indicate an imminent and substantial endangerment.**

The Letter next argues that AGREMAX contains arsenic, as do the local soils. CDA alleges that the background concentrations of arsenic in the soil present an increased risk of cancer of 1 in 100,000 ( $10^{-5}$ ) to those who daily ingest the soil, apparently relying on EPA’s Regional Screening Levels for residential soils.<sup>17</sup> It makes this claim even though it presents no data on arsenic concentrations in the soil at the complained about locations, and no data supporting the assumption of daily human exposure to such soils at those sites. From this already unsupported foundation, the Letter then leaps to make the claim that placing AGREMAX on the soil results in a 1-in-1000 ( $10^{-3}$ ) increased cancer risk over a lifetime, again presenting no data on actual arsenic concentrations at specific sites or any data on human exposure. Letter at 8. These claims are flawed on multiple levels.

First, for there to be a potential threat to human health, the substance must both be present at a site at an alleged harmful concentration and humans must be exposed to it in the way that the substance could harm them. Yet, the Letter presents no basis for either conclusion (*i.e.*, CDA presents no evidence of site-specific concentrations of any constituent, information on exposure to such constituents, or any causal link between such site-specific information and the use of AGREMAX). For example, the EPA residential screening levels that CDA apparently relies upon assume, among other things, that individuals ingest the soil for 350 days/year for 30

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<sup>16</sup> In contrast, where background can be a useful metric is when a substance is present in AGREMAX at levels *below* background indicating that adding the material is not creating any risk beyond what is already present in the environment.

<sup>17</sup> EPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites (May 2012). Available at <http://www.epa.gov/region9/superfund/prg/>.

Mr. Richard Webster

November 30, 2012

Page 15

years.<sup>18</sup> CDA has not presented any evidence to suggest that, at any of the sites identified in your Letter, that a person will ingest any volume of AGREMAX, 350 days/year, for 30 years. Given that the material is a hard, aggregate material that is compacted and placed in roads and as structural fill and covered by other materials, it is wholly unreasonable merely to assume that type of daily ingestion of material. Hence, comparing laboratory data to screening levels cannot establish that any of these sites present a threat that is actionable under RCRA§7002.

Second, similarly, merely asserting a soil “screening level” is exceeded does not establish that there is a serious threat of harm that presents an endangerment. Again, as noted, CDA appears to be using EPA’s Regional Screening Levels. EPA developed these soil screening levels (or “RSLs”) to assess whether the presence of a substance in soil at a site presents a sufficient theoretical risk to warrant further review. Screening levels do not, however, establish unacceptable levels, let alone form a basis for asserting an imminent and substantial endangerment under RCRA§7002.<sup>19</sup> Rather, at a typical waste site (*i.e.*, not sites such as these, which involve the use of AGREMAX as a construction material), EPA gathers site-specific data, compares those site-specific data to the screening levels for each substance, and decides whether the concentration of a particular material warrants further study or should be excluded from further inquiry, taking likely exposure scenarios into account. The screening levels are extremely conservative, and EPA expressly cautions that being at or above a screening level does not “designate a site as ‘dirty’ or trigger a response action” by EPA.<sup>20</sup>

Indeed, courts that have considered this question agree that exceeding a screening level does not establish an endangerment under RCRA§7002. For example, in *Sanchez, supra*, the Puerto Rico district court specifically rejected the plaintiff’s assertions that exceeding a screening level “constituted such a threat” as “simply wrong.” 2010 U.S. Dist. LEXIS at \*28; *see Cordiano v. Metacon Gun Club, Inc.*, 575 F.3d 199, 212 (2d Cir. 2009) (soil, wetlands, sediment, and wetland surface water samples showing levels of lead that exceeded state residential risk screening standards were insufficient evidence for a reasonable jury to find an imminent and substantial endangerment to the environment); *Sullins v. ExxonMobil*, Civ. No. 08-04927 (N.D. Cal., Jan. 26, 2011) (finding no endangerment where contamination levels exceeded only regulatory screening levels); *see Lewis v. FMC Corporation*, 786 F. Supp. 2d 690, 710 (W.D.N.Y. 2011) (finding presence of arsenic exceeding state standards insufficient as “without any evidence linking the cited standards to potential imminent and substantial risks to human health or wildlife, reliance on the standards alone presents merely a speculative prospect of

<sup>18</sup> [http://www.epa.gov/reg3hwmd/risk/human/rb-concentration\\_table/usersguide.htm](http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/usersguide.htm) (“RSL User’s Guide”) (Table 1 Standard Default Factors )

<sup>19</sup> *E.g.*, EPA, Soil Screening Guidance: User’s Guide at 1 (July 1996) (screening levels “alone do not trigger the need for response actions or define “unacceptable” levels of contaminants in soil.”). Available at <http://www.epa.gov/superfund/health/conmedia/soil/pdfs/ssg496.pdf>

<sup>20</sup> EPA Regional Screening Levels, *supra* at FAQ No.2.

Mr. Richard Webster  
November 30, 2012  
Page 16

future harm, the seriousness of which is equally hypothetical.”); *see also Tilot Oil, LLC v. BP Products N. Am., Inc.*, No. 09-CV-210-JPS, 2012 U.S. Dist. LEXIS 5365, at \*23 (E.D. Wis. Jan. 17, 2012), *Board of County Comm’rs v. Brown Group Retail, Inc.*, 768 F. Supp. 2d 1092, 1105, 1110 (D. Colo. 2011); *Foster v. United States*, 922 F. Supp. 642, 662 (D.D.C. 1996).

Third, even using screening levels, the Letter incorrectly relies on “residential assumptions” when in reality, AGREMAX has been used primarily in roads, under parking lots, as structural fill, and in other isolated properties where the AGREMAX is buried under other materials, and it has *not* been used in residential areas where people could be exposed daily to uncovered AGREMAX. EPA has one set of screening levels for a site that is a residential area, and another set of screening levels for non-residential areas.<sup>21</sup> The screening levels differ because there are different assumptions about how people are exposed in a residential area, as opposed to other areas. The “residential assumptions” referenced by CDA assume that the material is present at and covers the surface, and a family is exposed to a substance 350 days a year for 30 years by ingesting it, breathing it in, or touching it. Here, your Letter proffers no evidence of large areas of uncovered AGREMAX located in a residential area for which there is that type of long-term, daily exposure. Hence, it is wrong to use residential screening assumptions as the basis for a claim that AGREMAX may present a risk in non-residential settings such as covered road beds and similar locations.

Fourth, even were one to use a residential screening level as a starting point, the concentration of arsenic outlined in the Letter does not pose a serious threat under a very conservative, EPA risk analysis. Rather, here, even using “residential assumptions,” *i.e.*, assuming that all of the AGREMAX at each site is uncovered and the same people are ingesting arsenic-containing AGREMAX 350 days a year for 30 years – facts we know not to be the case – the theoretical, worst case screening risk from arsenic calculated using EPA’s residential RSL for arsenic based on the data you cite is an excess cancer risk of 1-in-10,000 (or  $1.0 \times 10^{-4}$ ). *See* Letter from A. Dyer, AESPR, to P. Nieves, Puerto Rico EQB (March 25, 2011) at Table 4 (“AESPR March 2011 Letter”) (cited in your Letter). That theoretical risk is within the “target risk range” (1-in-10,000 ( $1 \times 10^{-4}$ ) to 1-in-1,000,000 ( $1 \times 10^{-6}$ )) conservatively set by EPA as fully protective of human health.<sup>22</sup> Moreover, these are wholly theoretical risks, and placed in context, cannot be viewed as presenting a substantial threat warranting an action under RCRA§7002. A 1-in-10,000 risk is extremely low – it is the same as the risk of being hit by lightning during a lifetime. <http://www.lightningsafety.noaa.gov/medical.htm>.<sup>23</sup> And in any event, even this

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<sup>21</sup> RSL User’s Guide, *supra*.

<sup>22</sup> *E.g.*, EPA, Role of the Baseline Risk Assessment in Superfund Remedy Selection Decisions (April 22, 1991) Available at <http://www.epa.gov/oswer/riskassessment/pdf/baseline.pdf>

<sup>23</sup> Using EPA’s non-residential screening level, which is based upon assumptions regarding lifetime occupational exposures that would also over-state the likely exposure to AGREMAX, the theoretical additional cancer risk during a lifetime is approximately 2.5 in 100,000. Again, that is well within EPA’s acceptable target risk range.



Mr. Richard Webster  
November 30, 2012  
Page 17

evaluation is purely hypothetical, since individuals are not ingesting road bed material 350 days a year for 30 years.

Fifth, there is no basis for CDA's claim that an arsenic level of 40 mg/kg poses a 1-in-1,000 ( $10^{-3}$ ) theoretical risk of increased cancer. Even using EPA's residential screening level of 0.4 mg/kg, which EPA claims is associated with a 1-in-1,000,000 ( $1 \times 10^{-6}$ ) risk, assuming a 40 mg/kg arsenic level in AGREMAX produces a  $1 \times 10^{-4}$  risk level, not a  $1 \times 10^{-3}$  risk (even using the entirely unrealistic residential exposure assumptions embedded in EPA's soil screening levels). One would have to have an arsenic concentration 1,000 times higher than EPA's 0.4 mg/kg screening level, or 400 mg/kg, to achieve a risk level of  $10^{-3}$  at a residential site. Your Letter offers no such data. Alternatively, if the concentration of arsenic were approximately 40 mg/kg, the assumed exposure would have to increase by an order of magnitude (i.e., 10-fold) by virtue of the presence of the AGREMAX in road beds in order to generate such a theoretical risk. There is no basis for assuming that the use of AGREMAX will cause individuals to ingest 10 times more dirt than EPA already conservatively assumes is ingested in residential backyards, 350 days a year, for 30 years. Thus, the Letter does not offer any factual or scientific evidence to support CDA's assertion that AGREMAX poses a 1-in-1000 risk of increased cancer.<sup>24</sup>

Sixth, *none* of the other substances trumpeted in your Letter as exceeding "background" would exceed EPA's very conservative residential screening levels<sup>25</sup> that CDA apparently relies on for its analysis of arsenic in soil. Here, the data and screening levels speak for themselves:

Constituent	Data in CDA Letter	Residential soil screening level	Non-Residential soil screening level	Above EPA screening level?
Beryllium	2.3 mg/kg	160 mg/kg	2000 mg/kg	NO
Boron	140 mg/kg	16,000 mg/kg	200,000 mg/kg	NO
Mercury	0.64 mg/kg	23 mg/kg	310 mg/kg	NO
Molybdenum	8.7 mg/kg	390 mg/kg	5100 mg/kg	NO
Selenium	19 mg/kg	390 mg/kg	5100 mg/kg	NO

<sup>24</sup> To the extent CDA is trying to assert that the risk from exposure to arsenic in AGREMAX can be *added* to the risk from exposure to arsenic in soil, that assertion is without any scientific basis. The screening analysis is based on hypothetical exposure scenarios – it hypothesizes that a certain amount of dirt will be ingested every day for many years. As such, adding the risks makes no sense. It assumes, incorrectly, that people will consume twice as much dirt each day. To put it another way: The screening levels are based on a person consuming a hypothetical amount of AGREMAX every day. Just because there is arsenic already in soil does not mean we should assume that a person is going to consume *both* an amount of AGREMAX *and* also the same amount of soil. No risk assessment guidance or credentialed risk assessment expert would support that contention.

<sup>25</sup> Although the Letter only cited the alleged increased cancer risk, EPA's RSLs include screening levels for non-cancer risks for some substances. If applicable, we have included here the *lower* of the two EPA screening levels.

Mr. Richard Webster

November 30, 2012

Page 18

Thus, *none* of these data suggest a potential threat warranting *any* further investigation using the very metric proffered by the CDA's Letter, let alone a serious threat actionable under RCRA.

**b. The allegations regarding the alleged effects of potassium and radium activity levels in AGREMAX are without merit.**

Citing the AGREMAX test data AESPR had previously provided to the Puerto Rico EQB, the Letter also asserts that the concentrations of potassium and radium exceed EPA's so-called "Preliminary Remediation Goals" (or "PRGs") for these substances. From that, CDA purports to calculate cancer risks greater than 1-in-10,000 for residential soils and as high as 1-in-100 in "agricultural soils." Letter at 9. These assertions rehash the same claims CDA members have made before – claims that AES Puerto Rico answered in its March 2011 letter to the Puerto Rico EQB.

First, as noted above, for there to be evidence of a potential endangerment to human health RCRA § 7002 the compound in question must be present at a site at a hazardous concentration and in a way in which humans could, realistically, be sufficiently exposed to be at risk for significant harm. According to EPA, "in a site-specific context ... assessors must answer fundamental questions about the site. Information on the radionuclides that are present onsite, the specific contaminated media, land-use assumptions, and the exposure assumptions behind pathways of individual exposure is necessary in order to develop radionuclide-specific [Preliminary Remediation Goals]." <http://epa-prgs.ornl.gov/radionuclides/>. Yet, again, CDA has proffered none of that information from any location where it claims "disposal" has occurred.

Second, as detailed in AES Puerto Rico's March 2011 letter to the EQB, the levels of radionuclide activity in AGREMAX simply do not present a risk to human health or the environment. In fact, the activity levels are well within the range of exposure to radionuclide-containing materials we face in everyday life. AESPR March 2011 Letter at Table 1 and Figure 3. As the letter already outlined for the EQB, the United States Geological Survey prepared a fact sheet regarding radioactive elements in coal and fly ash. USGS concludes:

Radioactive elements in coal and fly ash should not be sources of alarm. The vast majority of coal and the majority of fly ash are not significantly enriched in radioactive elements, or in associated radioactivity, compared to common soils or rocks. This observation provides a useful geologic perspective for addressing societal concerns regarding possible radiation and radon hazard.

<http://pubs.usgs.gov/fs/1997/fs163-97/FS-163-97.pdf>. The CDA Letter offers no site-specific data to contradict the USGS' basic conclusion.

Mr. Richard Webster  
November 30, 2012  
Page 19

Third, as detailed in the March 2011 letter to Puerto Rico EQB, the specific levels of radionuclide activity tested do not present a risk to human health. AES Puerto Rico tested AGREMAX for more than 40 radionuclides, but only a handful were detected. AESPR March 2011 at 3. Of those that were detected, AES Puerto Rico compared the results to (i) existing levels in other road beds where there was no AGREMAX and (ii) screening levels for radionuclides, based on EPA's default PRGs. Similar to the RSLs, the default PRGs for radionuclides are very conservative screening levels at which a person could be exposed to radionuclides on a daily basis without exceeding an excess cancer risk level of 1 in a million ( $1 \times 10^{-6}$ ).<sup>26</sup> Like the RSLs, the PRGs are not a cleanup standard, but a screening tool which may exclude substances from further consideration.<sup>27</sup> Hence, as AESPR documented for EQB more than 18 months ago, with two exceptions (radium and potassium), the radionuclides found in AGREMAX are at activity levels consistent with common exposure and below PRGs for the most conservative, residential exposure scenario contained in the EPA guidance. AESPR March 2011 Letter, *supra*. Hence, those materials warrant no further discussion.

Fourth, the levels of radium and potassium do not present a risk to human health.

Radium. As documented for EQB, the radium activity in the samples of AGREMAX is consistent with the background levels already in the environment in road beds. *Id.* at 3; see Figures 1-2 and related tables. Thus, the addition of AGREMAX cannot present an imminent and substantial endangerment due to radium if radium is present at about the same level in AGREMAX as it is in background.

Further, the federal government has set soil standards for radium, *see* 40 C.F.R. Part 192, which EPA has used in setting standards for cleanups under the federal Superfund law, CERCLA. <http://www.epa.gov/superfund/health/conmedia/soil/cleanup.htm>. Those federal soil standards establish a criteria for activity in surface soil of 5 pCi/g of radium-226 plus a calculated background threshold value. 40 C.F.R. § 192.12(a)(1). Thus, without even considering site-specific background activity level, the maximum detected radium-226 in AGREMAX (approximately 2 pCi/g) is below the accepted EPA level. AESPR March 2011 at Table 3. If the maximum level detected is half the accepted level in soil, it cannot be used to suggest there may be an endangerment.

However, even were it necessary to compare the material to PRGs, under the more logical non-residential exposure scenario, the radium-226 would be below the screening level

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<sup>26</sup> EPA Preliminary Remediation Goals for Radionuclides, Users Guide at 2.3 (generic PRGs are calculated based on a  $1 \times 10^{-6}$  cancer risk standard). Available at [http://epa-prgs.ornl.gov/radionuclides/prg\\_guide.html](http://epa-prgs.ornl.gov/radionuclides/prg_guide.html)

<sup>27</sup> EPA Preliminary Remediation Goals for Radionuclides, FAQs, FAQ No. 2 (PRGs are used for "site screening" and "are not de facto cleanup standards and should not be applied as such.") available at <http://epa-prgs.ornl.gov/radionuclides/faq.html>

Mr. Richard Webster

November 30, 2012

Page 20

PRGs calculated using EPA guidance. *E.g.*, AESPR March 2011 at Figure 2, Table 3. Indeed, even if one were to assume hypothetically that the AGREMAX was placed uncovered in a residential area, the theoretical screening level risk would still be less than  $1 \times 10^{-4}$ , and thus within EPA's "target risk range." AESPR March 2011 at 3 and Table 1. On this point, your Letter (at 9) is simply mistaken in claiming that radium-226 risks are higher.<sup>28</sup>

Potassium. The analysis is similar for potassium. As documented for the EQB, the potassium (K-40) activity in AGREMAX is consistent with background levels that AES Puerto Rico found are already in the environment, *id.* at 3 and at Figures 1-2 and Tables 3, and is comparable to or below the activity levels in a wide range of naturally occurring materials including wood, granite, igneous rock, sandstone, limestone, natural clays, and sand fill materials. *See* AESPR March 2011 at 4 and at Figure 3. It is likewise many times lower than the K-40 activity in other commonly used construction materials, such as red brick. *See* AESPR March 2011 at 4 and at Figure 3. In fact, the activity levels of potassium in AGREMAX are comparable to or lower than that in a variety of other materials, including foods which are found in any grocery store, such as bananas and salt substitutes. *See* AESPR March 2011 at Figure 3. Indeed, a table salt substitute is made of potassium chloride (KCl) and has potassium levels some 65+ times higher than AGREMAX. Given these comparisons, any addition of potassium to the environment associated with the beneficial use of AGREMAX surely cannot present an endangerment under RCRA.

Moreover, the potassium activity in these materials – including foods – make it clear that EPA's PRG for potassium is wholly unrealistic and cannot begin to form the foundation for any claim under RCRA § 7002. The level of potassium activity that would exceed EPA's residential PRG is only 0.116 pCi/g. Yet, other materials that are commonly used and even routinely eaten by humans every day would exceed the level that EPA's PRG would say requires further study. AESPR March 2011 Letter at Figure 3. It would be wholly illogical to apply the PRG as a screening level when it is orders of magnitude lower than the activity levels in background and common products. AESPR March 2011 at Figure 2.

However, even were it necessary to compare the potassium activity in AGREMAX to the PRGs, there is still no cause for action under RCRA. Under both the residential and non-residential exposure scenarios – again, both of which are based on exposure assumptions that over-state the real potential for exposure to AGREMAX – the theoretical screening level risk of

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<sup>28</sup> The CDA Letter also claims that the activity level would allegedly exceed an "agricultural soil" level. This is a wholly irrelevant comparison, as CDA has not alleged that AGREMAX has been used in any agricultural soil. Nor are there any data to suggest "agricultural soil" has been or may be impacted by radium activity from AGREMAX.

Mr. Richard Webster  
November 30, 2012  
Page 21

the potassium activity would be within EPA's target risk range. *See* AESPR March 2011 at 3, and at Figure 2.<sup>29</sup> The Letter's contrary assertion is, again, mistaken on the facts.

**c. The allegations regarding chromium are wrong.**

CDA also claims that there is hexavalent chromium in AGREMAX and that presents an endangerment under RCRA § 7002 due to potential impacts to groundwater. Letter at 9. In another improbable daisy chain of wholly unsubstantiated logic, CDA contends that since AGREMAX is on the ground, chromium could leach from it, that leached chromium could reach the groundwater, and that groundwater could reach a well at concentrations that may be harmful, and that such a well is currently being used for drinking water. Therefore, according to CDA, there is an imminent and substantial endangerment under RCRA.

Again, CDA makes very serious claims about AGREMAX presenting a risk to the public – but it offers no serious proof to back up its charges. The mere presence of chromium in AGREMAX, or the environment, does not establish a “serious threat” sufficient to warrant any action under RCRA § 7002. *See* discussion, *supra*. There must be actual proof of such a threat. CDA, however, has not presented actual data. Indeed, AGREMAX has been used in roads and as structural fill for many years now, but CDA offers not one iota of field data to suggest that chromium, in whatever form, has actually leached out of AGREMAX in the environment and reached any groundwater. Nor does it have anything that tells us anything about a pathway for the chromium to reach a person – where is groundwater moving, at what rate, whether it could even reach a well, is that well currently being used for drinking water, and if it could reach a well, when might it reach the well and at what concentration would the chromium be when it reached it. These are fundamental elements of proof which are totally lacking in CDA's sweeping, but wholly unsubstantiated allegations.

In any event, there is no defensible basis for the arguments CDA makes in its Letter. First, according to CDA, “a safe level of drinking water for hexavalent chrome is approximately 20 [parts per trillion].” Letter at 9, n.29. Yet, this “safe level” asserted by CDA is not the drinking water standard in Puerto Rico – or for that matter anywhere in the United States. It is a “goal” that one California agency has proposed, but California has itself not adopted it as its drinking water standard. <http://www.cdph.ca.gov/certlic/drinkingwater/Pages/Chromium6.aspx> Nor has EPA. Rather, the only drinking water standard in the United States for chromium is the

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<sup>29</sup> As with radium, any assertion regarding potassium levels exceeding an “agricultural soil” level is irrelevant – and there are no data or other evidence to suggest agricultural soil has been impacted by the presence of potassium from AGREMAX or coal ash.

Mr. Richard Webster

November 30, 2012

Page 22

maximum contaminant level (“MCL”) of 0.1 milligrams per liter (mg/L), or 5,000 times higher than the concentration CDA asserts is the safe level.<sup>30</sup>

Second, CDA asserts that there are data (using EPA’s TCLP test) that show that 0.1 mg/L of total chromium would leach from AGREMAX. Letter at 9. A review of the AES Puerto Rico data on which CDA is relying shows that this assertion is simply incorrect. Specifically, in its March 2011 letter to the Puerto Rico EQB, AES Puerto Rico presented the results for chromium for the TCLP test from two laboratories – one lab (Paragon) reported that it had a “detection limit” of 0.1 mg/L for chromium. *See* AESPR March 2011 Letter at Table 2. It is beyond dispute that when a lab reports data at a “detection limit” it is reporting that the lab did not detect chromium at or above that limit, but that its equipment were not sensitive enough to detect how much total chromium was actually present below that limit. In contrast, in the very same collection of data provided to EQB, AESPR had three other samples from a second lab (EQLAB) which had analytical equipment that could detect whether chromium was present at lower concentrations. In each case, the second lab found chromium to present, but at substantially lower levels than CDA claims in its letter – 0.008, 0.009, and 0.012 mg/L. AESPR March 2011 Letter at Table 2. Those are approximately 8-12 times *below* the federal drinking water standard.

Third, your Letter urges that if the chromium could leach, then there must be “a strong potential to contaminate groundwater,” but offers nothing to substantiate this assertion. In fact, the leaching or “partitioning” of chromium in a laboratory test does not mean there would be any impact on groundwater quality. Site-specific data and other information would have to be collected and assessed in order to determine whether there is any risk, let alone a “serious threat” that may present an imminent and substantial endangerment. For example, it is essential to understand the regional characteristics of the groundwater system, such as, among other things, how much rainfall is likely to reach groundwater, by considering how much actually percolates into the subsurface as opposed to being carried as run off, evaporating, or being taken up by plants. Absent that and other analyses, none of which your Letter presents, there are no data suggesting that rainfall is a significant contributor to groundwater and nothing other than your unsubstantiated assertion that significant amounts of chromium would be partitioned from AGREMAX into groundwater.

In addition, when water travels from the ground surface, there are common “attenuation” processes take place.<sup>31</sup> Unless those factors are taken into account, it is mere speculation to

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<sup>30</sup> <http://water.epa.gov/drink/contaminants/index.cfm>. EPA is considering setting a separate MCL for hexavalent chromium, but any decision is years away as it is still reviewing the available information. <http://water.epa.gov/drink/info/chromium/index.cfm>. Moreover, EPA’s peer review panel, the EPA Science Advisory Board, has raised concerns with the assumptions underlying the science of the “safe level” asserted by CDA, in particular the assumptions about effects at low concentrations such as those in the data at issue here. [http://cfpub.epa.gov/ncea/iris\\_drafts/recorddisplay.cfm?deid=221433](http://cfpub.epa.gov/ncea/iris_drafts/recorddisplay.cfm?deid=221433).

Mr. Richard Webster

November 30, 2012

Page 23

conclude any chromium that could partition out of AGREMAX would reach groundwater – let alone ever reach a drinking water well. For one, the water must be able to percolate through or around the AGREMAX and reach the underlying soil. Second, it must percolate downward through this soil until it reaches the water table. These processes are not only often very slow, but the water interacts with the soil during percolation which tends to decrease the concentrations of metals as they adsorb onto the soil. Third, once the percolating water reaches the underlying groundwater, it mixes with the groundwater, which also decreases (or attenuates) concentrations. Fourth, it then moves with the groundwater flow, during which there are further interactions between the constituents and the soil/water that will tend to attenuate concentrations further. Fifth, a legitimate risk analysis would also have to determine whether the groundwater at issue is otherwise suitable for use as drinking water and likely to be so used. As a result of all these processes, depending on local environmental conditions, the concentration of chromium—which, as discussed above, would already be well within drinking water standards at the outset—would be further substantially reduced by the time it would migrate any distance from the AGREMAX. Yet, CDA has made no effort to assess any of these factors.<sup>32</sup>

**3. The data cited in the CDA Letter also do not support a contention that there is a serious, near term threat to the environment**

CDA also argues that five metals (arsenic, boron, molybdenum, mercury, and selenium) are present in AGREMAX at concentrations that are allegedly “toxic to certain plants,” could impact “certain birds,” or are “toxic to wildlife.” Letter at 8. You purport to support this theory by referring to various thresholds for these five metals, although your Letter offers no supporting references or data to document its contentions. Regardless, these sweeping assertions are not well founded.

First, just like the analysis of human health, to show that there is an imminent and substantial ecological risk, CDA must present data that one of the five metals in question is in

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<sup>31</sup> These are well understood factors that have to be considered based on available data before determining whether and if so at what levels there could be any a risk that drinking water could potentially be impacted by the presence of a substance in soil. See e.g., EPA, Ground Water Volume 1: Ground Water and Contamination, EPA/625/6-90/016a at 101-102 (Sept. 1990); see also EPA, Determining Soil Response Action Levels Based on Contaminant Migration to Ground Water: A Compendium of Examples, EPA/540/2-89/057 (Oct. 1989) .

<sup>32</sup> The Letter also cites EPA’s November 2011 letter to Puerto Rico EQB asserting that “locations at which some of the deposition of Agremax has taken place overlie shallow sole source drinking water aquifers, and are thus particularly sensitive to environmental harm.” Letter at 6. It is not clear what locations EPA claims to be referencing, the basis of EPA’s assertion, and how EPA’s assertion relates to the locations in your Letter. There is a regulatory process for EPA to designate an aquifer as a “sole source aquifer” under the Safe Drinking Water Act, 42 U.S.C. § 300h-3(e), but there are none in Puerto Rico. See [http://www.epa.gov/safewater/sourcewater/pubs/qrg\\_ssamap\\_reg2.pdf](http://www.epa.gov/safewater/sourcewater/pubs/qrg_ssamap_reg2.pdf); <http://www.hud.gov/local/shared/working/r4/environment/guidancepr.cfm?state=pr-vi> (“There are no Sole Source Aquifers in Puerto Rico...”)

Mr. Richard Webster  
November 30, 2012  
Page 24

fact present at a site at a concentration that can pose a serious hazard, that there are plants or birds or mammals that are actually exposed to the compound in a way that could cause substantial harm to them, and that this harmful concentration and exposure is caused by the use of AGREMAX. *See* discussion, *supra*. The Letter presents no such evidence. Unless there is some legitimate reason to conclude that there is a complete pathway of exposure to an ecological receptor at a concentration for which there is a serious threat of harm, there can be no meaningful basis for a claim.

Second, the premise of ecological risk is that plants or animals or birds or their habitat are being impacted in some adverse fashion. Yet, there is nothing offered to suggest that there has been any impact at all on any plant species, mammal, or bird in Puerto Rico, or their habitat. For example, AGREMAX has been used in road beds and structural fill over the past several years, yet the Letter makes no claims and offers no evidence to suggest that any population of any birds or other wildlife has been impacted or any species of plant has failed to thrive due to the alleged presence in AGREMAX of the five metals identified in the CDA's Letter.

Third, while the Letter claims (with citation) that certain concentrations "are toxic," we believe that the levels you have cited in your Letter are "screening benchmarks," prepared by researchers at Oak Ridge National Laboratory. *E.g.*, Efroymsen, R.A., et al., Toxicological Benchmarks for Screening Contaminants of Potential Concern for Effects on Terrestrial Plants: 1997 Revision at 1-1 (Nov. 1997) ("Plants Benchmark") (purpose of document was to derive "benchmarks" and if exceeded, "more analysis is needed"); R.A. Efroymsen, et al., Toxicological Benchmarks for Contaminants of Potential Concern for Effects on Soil and Litter Invertebrates and Heterotrophic Processes: 1997 Revision at 1-1 (Nov. 1997) (benchmarks are appropriate for "screening purposes only").<sup>33</sup> These reports do not set legal requirements. Rather, at most, these are potentially akin to the human health "screening levels" for which exceedances are not a basis to bring a claim under RCRA§ 7002. *See* discussion, *supra*.

This is particularly the case given the limited quality and scope of the data on which these screening benchmarks purport to rely. For example, CDA makes the broad assertion that "Boron is toxic to plants at a level of 0.5 mg/kg." Letter at 8. In fact, the Oak Ridge document does not say that. It refers to a single article from 1977 that reportedly looked at the effects of boron on the 7-week weight of 3 corn seedlings in a growth chamber and reported a range of data, including results showing no effect. Plants Benchmark at 3-6. The report itself concludes that "confidence in a benchmark value of 0.5 ppm is low because it is based on fewer than 10 values." *Id.* Similarly the Letter claims "Molybdenum is toxic to plants at a level of 2 mg/kg." Letter at 8. However, the Oak Ridge document bases this on single study which reports "unspecified toxic effects on plants" and, as such, the researchers' confidence in the benchmark

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<sup>33</sup> *See* <http://www.esd.ornl.gov/programs/ecorisk/documents/tm85r3.pdf>;  
<http://www.esd.ornl.gov/programs/ecorisk/documents/tm126r21.pdf>



Mr. Richard Webster

November 30, 2012

Page 25

is again “low.” Plant Benchmark at 3-23. In fact, other studies not only found that toxicity due to molybdenum “has never been recorded” in the field, but “observed slight increases in many growth parameters of soybean with fertilization with molybdenum.” *Id.* There are similar limitations on the other screening benchmarks.

Fourth, the screening benchmarks make assumptions about exposure that do not apply to AGREMAX, given its properties and how it is used. The premise underlying the screening benchmarks is that there is direct exposure to the particular metal because the plant, animal, or bird inhabit a particular site. Hence, the screening benchmarks assume that sensitive plants are uptaking the material from the soil and that creatures that live in the ground consume the material (earthworms) and the worms in turn are eaten by other creatures. As an example, the researcher’s screening benchmarks apparently relied on by CDA are set based on the assumption that wildlife are eating nothing but earthworms and plants that have allegedly been impacted by AGREMAX.<sup>34</sup> Yet, your Letter offers no rationale for applying those types of assumptions to any of the locations you reference.

On the contrary, when AGREMAX is used in roads, it is covered with a layer of asphalt, mogolla or other material. When it is used as a component of structural fill, it is covered by other layers of materials. Hence, materials are simply not sufficiently available to present the ecological risk your Letter asserts. As such, there is no basis for drawing the sweeping assumptions that the use of AGREMAX presents an ecological risk.<sup>35</sup>

Further, AGREMAX is an aggregate material, and engineering tests have documented that AGREMAX is strong enough to be used as an aggregate in roads and structural fill. *See* discussion, *supra*. Given those properties, even if we were to assume that AGREMAX is present on the surface, CDA has not presented a factual basis supporting their assertion that the presence of these substances in AGREMAX is causing exposures to birds, animals or plants at concentrations of concern. For example, it is unreasonable to assume that birds are going to be searching for worms under the compacted road surfaces, even assuming they could dig through the AGREMAX, or that burrowing creatures or other wildlife are going to burrow under a road. Likewise, plants are typically not grown in the middle of a road, under a structure, or as part of a bridge. Even if some plants can grow in AGREMAX itself, there is no evidence that any particular substances will be available to be taken up by plants in concentrations of concern to those plants or animals that may feed on them. Indeed, you have offered no evidence that sensitive plants or species are present at any of the locations you reference.

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<sup>34</sup> *E.g.* <http://www.esd.ornl.gov/programs/ecorisk/documents/tm162r2.pdf> Table 5 (assumes dietary distribution of 50% earthworms and 50% plants that were impacted by the substance)

<sup>35</sup> <http://www.esd.ornl.gov/programs/ecorisk/documents/tm162r2.pdf> (“If a site contains no habitat, such as a parking lot, it should be screened out”).

Mr. Richard Webster

November 30, 2012

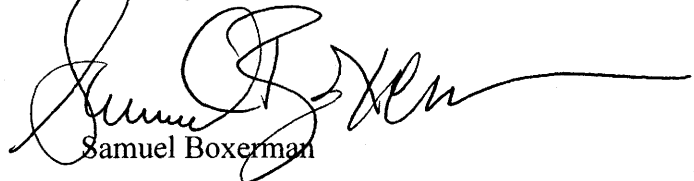
Page 26

Fifth, specifically with regard to plants, the screening levels relied on by CDA are based on applications wholly inconsistent with the use of AGREMAX. As noted, the Letter makes assertions about the metals being harmful to "plants" – but it does not specify what species of plants are impacted and in what way. Nor is there any indication that there are some data that connects these metals to any impact on plants found in the areas where AGREMAX has been used. This is not surprising, because it is typically the case that ecological risk tools are based on the potential to impact agricultural crops, such as boron, as noted above. Yet, there is no evidence that AGREMAX has been placed in or even near a field where there are crops that have been or could be affected by the presence of AGREMAX.

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Again, we urge you not to pursue this proposed litigation. If you wish to discuss this further, please contact the undersigned.

Sincerely,



Samuel Boxerman

cc: Pedro J. Nieves Miranda, Puerto Rico EQB  
Manuel Mata  
David T. Buente  
Matthew Krueger